



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before  
THE BOARD OF PATENT APPEALS AND INTERFERENCES

IN THE MATTER OF:

Serial No.: 10/796,145

Group Art Unit: 1754

Filed: March 10, 2004

Examiner: JOHNSON, Edward M.

Applicant: HEKAL, Ihab M.

Title: OXYGEN ABSORBER

RESPONSE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office letter of September 19, attached  
is Applicant's amended Appeal Brief.

November 19, 2007

Respectfully submitted,

*William H. Holt*  
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Certificate of Mailing

I hereby certify that this Response is being deposited with  
the U.S. Postal Service with prepaid first class mail, addressed  
to Commissioner for Patents P.O. Box 1450, Alexandria, VA 22313-  
1450, on November 19, 2007.

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APPEAL BRIEF

Commissioner for Patents  
P.O. BOX 1450  
Alexandria, Virginia 22313-1450

Sir:

This is an appeal from the Examiner's FINAL rejection of  
claims 1-14, 16 and 19.

(1) Real Party in Interest

This application and the inventions disclosed therein are the  
property of the inventor/applicant, Dr. Ihab M. Hekal.

(2) Related Appeals and Interferences

There are no known appeals or interferences which will  
directly affect or be directly affected by or have a bearing on the  
Board's decision in this appeal.

(3) Status of Claims

Claims 1-14, 16 and 19 are present in this appeal. Claim 15  
was cancelled and written in independent form as allowed claim 17.  
Claims 17 and 18 stand allowed. The appealed claims are presented  
in the accompanying Appendix.

#### (4) Status of Amendments

No Amendments have been filed subsequent to the FINAL rejection.

#### (5) Summary of Claimed Subject Matter

##### **Claim 1:**

Independent claim 1 defines an oxygen absorber comprising an iron powder, "and a first layer coated on a surface of the iron powder, said first layer being formed of iron chloride." See: (1) page 3, lines 16-19; (2) page 4, lines 23-26; and (3) page 6, lines 17-30.

##### **Claim 13:**

This is an independent claim directed to a method of manufacturing the oxygen absorber of Claim 1+. See Example 1, page 8, line 30 to page 9, line 4.

#### (6) Grounds of Rejection to be Reviewed on Appeal

1. Claims 1-13, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe *et al.* US 5,241,149.

2. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '149 in view of Teumac *et al.* US 6,465,065.

(7) Argument

ISSUE 1:

Are claims 1-13, 16 and 19 properly rejected over Watanabe et al?

In the Final rejection at paragraph 2, line 7, the Examiner ADMITS, "Watanabe fails to disclose a coated layer." (Emphasis supplied.) The patent discloses a different type of oxygen absorber wherein the material is enclosed in a packet comprised of "laminated layers of microwave-proof and packing material...." (Final Rejection, last 4 lines on page 2.) With all due respect, applicant submits that there is no teaching, or suggestion, of the invention defined in applicant's parent claims 1 and the claims depending therefrom.

Regarding parent claim 13, the Examiner has made no apparent effort to show that Watanabe et al. teach or suggest Applicant's claimed steps of taking an iron powder and "forming a first layer formed of iron chloride on a surface of the iron powder." Applicant's invention relates to taking iron powder and forming a layer of iron chloride thereon, and the Examiner admits that the cited patent "fails to disclose" what is claimed. By coating or forming the layer of iron chloride upon a surface of the iron powder, Applicant's material is more active than that of Watanabe et al. and maintains that activity when mixed with matrix material because the coated layer does not become separated from the

underlying iron powder.

Accordingly, reversal of the rejection is in order.

Claims 2-12, dependent from parent claim 1, are so short as to make a "concise" explanation superfluous. These claims are not taught or suggested by the patent cited by the Examiner and are supported in the specification, as follows:

**Claim 2:**

This claim further defines the oxygen absorber of claim 1 as comprising a matrix material being filled with the iron powder that is covered with the first layer (of iron chloride). See: (1) page 3, lines 19-22; (2) page 4, lines 13-18; and (3) page 7, lines 22-32.

**Claim 3:**

This claim defines a preferred iron powder as being "sponge iron powder with porous surface." See: (1) page 5, lines 20-25+.

**Claim 4:** See page 4, lines 3-7.

**Claim 5:** See page 4, lines 3-7.

**Claim 6:** See page 6, line 31 to page 7, line 13.

**Claim 7:** See page 7, lines 6-13.

**Claim 8:** See page 4, lines 8-12.

**Claim 9:** See page 4, lines 13-16.

**Claim 10:** See page 4, lines 113-18.

**Claim 11:** See page 7, lines 14-21.

**Claim 12:** See page 7, line 33 to page 8, line 7.

Claims 14, 16 and 19, dependent from parent claim 13, are so short as to make a "concise" explanation superfluous. These claims are not taught or suggested by the patent cited by the Examiner and are supported in the specification, as follows:

**Claim 14:** See Example 1, page 8, line 30 to page 9, line 4.

**Claim 16:** See page 7, lines 14-21.

**Claim 19:** See page 8, lines 18-28.

ISSUE 2:

Does Teumac et al. overcome the failings of Watanabe et al.?

Claim 14 depends from parent claim 13. As pointed out above, Watanabe et al. fail to teach or suggest the method of claim 13 so that claim 14 is considered to be allowable therewith. Applicant's claimed method, as defined in claim 14, comprises the steps of taking iron powder, coating it with a first layer of iron chloride (not taught or suggested by Watanabe et al.), then mixing it with a matrix material, melting the mixture, extruding it into a strand, pelletizing it, and molding the resulting pellets -- resulting in an oxygen absorber which comprises iron powder having a first layer of iron chloride formed thereon. Thus, it is readily apparent that Teumac et al, not only fail to teach or suggest the shortcomings of Watanabe et al. with regard to the steps of parent claim 13, but also fail to teach or suggest the sequence of steps enumerated in dependent claim 14. Accordingly, claim 14 is deemed to be allowable with parent claim 13.

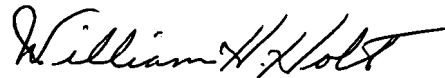
In view of the foregoing remarks, applicant's independent claims 1 and 13 are deemed to be allowable as well as claims 2-12 depending from claim 1, and claims 14, 16 and 19 depending from claim 13.

Conclusion

Applicant respectfully submits that the cited art fails to teach or suggest the claimed invention. Accordingly, the Examiner's rejection of claims 1-14, 16 and 19 is deemed to be in error, and reversal thereof is courteously solicited.

Respectfully submitted,

November 19, 2007



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(8) APPENDIX  
Claims on Appeal

1. An oxygen absorber comprising:  
an iron powder, and  
a first layer coated on a surface of the iron powder, said first layer being formed of iron chloride.
2. An oxygen absorber according to claim 1, further comprising a matrix material filled with the iron powder covered with the first layer.
3. An oxygen absorber according to claim 1, wherein said iron powder is sponge iron powder with porous surface.
4. An oxygen absorber according to claim 1, wherein said iron powder has an average diameter of less than 100 micrometers.
5. An oxygen absorber according to claim 1, wherein said iron powder is carbonyl iron powder with an average diameter of less than 20 micrometers.
6. An oxygen absorber according to claim 1, wherein said first layer is formed of at least one of anhydrous ferric chloride and ferrous chloride.
7. An oxygen absorber according to claim 1, wherein said first layer is coated on the iron powder such that a ratio of chloride to iron is 0.1% to 10% by weight.
8. An oxygen absorber according to claim 1, wherein said



first layer has a thickness of less than 100 nm.

9. An oxygen absorber according to claim 2, wherein said matrix material is a plastic having a melting point of 80°C to 300°C.

10. An oxygen absorber according to claim 2, wherein said matrix material is filled with the iron powder at 50% to 90% by weight.

11. An oxygen absorber according to claim 1, further comprising a second layer coated on the first layer formed on the surface of the iron powder and formed of iron chloride.

12. An oxygen absorber according to claim 11, wherein said second layer is formed of at least one of anhydrous ferric chloride, ferrous chloride hexahydrate, ferrous chloride, and ferrous chloride tetrahydrate.

13. A method of manufacturing an oxygen absorber, comprising the steps of:

preparing iron powder, and

forming a first layer formed of iron chloride on a surface of the iron powder.

14. A method of manufacturing an oxygen absorber according to claim 13, further comprising the step of mixing the iron powder and a matrix material, melting the mixture of the iron powder and the

matrix material, extruding the molten mixture into a strand, pelletizing the extruded strand, and molding the pellet into a predetermined shape.

16. A method of manufacturing an oxygen absorber according to claim 13, further comprising the step of forming a second layer formed of iron chloride on the first layer formed on the surface of the iron powder.

19. A method as defined in claim 13 including the step of mixing said oxygen absorber with other plastic material, and forming a container therefrom, wherein the oxygen absorber functions as a barrier against the passage of oxygen.

(9) APPENDIX  
Evidence

None

(10) APPENDIX  
Related Proceedings

None